



13 January 2006

Ms. Kasey Ashley  
California Regional Water Quality Control Board  
North Coast Region  
5550 Skylane Boulevard, Suite A  
Santa Rosa, California 95403

Subject: Results of December 2005 Groundwater Monitoring  
Shoreline Development Property  
2 T Street, Eureka, California

Dear Ms. Ashley:

This letter transmits results of groundwater monitoring performed in December 2005 at the Shoreline Development Property in Eureka, California (Figure 1). GeoSyntec Consultants prepared this report on behalf of Shell Oil Company.

In accordance with Monitoring and Reporting Program No. R1-2001-83 (M&R 83), issued on 30 July 2001 by the California Regional Water Quality Control Board, North Coast Region (RWQCB), groundwater monitoring was performed at the site in August 2005. The results were transmitted to the RWQCB on 7 November 2005<sup>1</sup>. By letter dated 21 November 2005, the RWQCB provided comments on the 2005 Groundwater Monitoring Report<sup>2</sup>. In their comments, the RWQCB concurred with the recommendation to resurvey monitoring wells, discuss monitoring well MW-4 status, and discuss cleanup levels and new sampling data. The RWQCB also requested the following:

- a review of the remedy selection process used for the site Remedial Action Plan (RAP);

<sup>1</sup> GeoSyntec Consultants, 2005, "Results of August 2005 Groundwater Monitoring," 7 November 2005.

<sup>2</sup> California Regional Water Quality Control Board, North Coast Region (RWQCB), 2005, "Comments on Results of August 2005 Groundwater Monitoring," Shoreline Development, 2 T Street, Eureka, California, 21 November.

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- a work plan to evaluate the extent of groundwater impacts in the vicinity of downgradient monitoring well MW-1 and the location of the surface water-groundwater interface; and,
- submittal of the 2006 annual groundwater monitoring report.

A work plan, including review of the RAP, is being submitted to the RWQCB under separate cover. This report documents the effort of the December 2005 groundwater monitoring event and January 2005 well resurvey at the site.

## SITE SETTING

The 2.6-acre site is located at 2 T Street, in Eureka, California and is bounded on the north by Humboldt Bay. The site elevation is approximately 10 feet above mean sea level (MSL). The site was formerly the location of a bulk petroleum storage facility that contained six aboveground storage tanks, five underground storage tanks and an unlined retaining basin. Currently, the site is unpaved and vacant.

Between 1995 and 1997, approximately 10,000 cubic yards ( $\text{yd}^3$ ) of hydrocarbon-impacted soil was excavated from 5 areas in the southern portion of the site, treated on-site and then replaced in the excavations together with clean backfill. The soil data from the excavation indicated the soil cleanup goals were met with the excavation activities; however, the groundwater quality goal of 50 micrograms per liter ( $\mu\text{g}/\text{L}$ ) for total extractable petroleum hydrocarbons (diesel-range hydrocarbons) was not met. In the RAP for the site, Shell proposed monitored natural attenuation to address the diesel-range hydrocarbons present in groundwater<sup>3</sup>. In their approval of the RAP, the RWQCB issued M&R 83, which required groundwater monitoring on an annual basis to verify the groundwater remedy for the site<sup>4</sup>. Environmental investigation and

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<sup>3</sup> Pacific Environmental Group, 1999, "Remedial Action Plan," Former Shell Bulk Fuel Terminal, 2 T Street, Eureka, California, Case No. 1THUO78, 6 July.

<sup>4</sup> RWQCB, 2001, "Concurrence with Remedial Action Plan," 30 July.

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corrective actions are discussed in more detail in GeoSyntec's 13 January 2006 work plan<sup>5</sup>

The monitoring well network at the site consists of six on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7) and two off-site, upgradient monitoring wells (MW-9 and MW-10) installed in December 1991 and January 1994 at locations shown on Figure 2. Monitoring wells MW-5 and MW-8 were destroyed during soil excavation activities in 1995.

### SAMPLING PROCEDURES

The December 2005 groundwater monitoring event was performed on 14 December 2005 and consisted of measuring water levels in the accessible site monitoring wells and collecting and analyzing groundwater samples from wells MW-1, MW-2, MW-3, MW-6, MW-7, MW-9, and MW-10. As discussed below, MW-4 was not accessible for sampling. Blaine Tech Services, Inc. (Blaine Tech) of Sacramento, California performed the fieldwork and their sampling logs are provided in Attachment 1.

### GROUNDWATER ELEVATION AND FLOW DIRECTION

Before measuring the depth to groundwater, Blaine Tech used an interface probe to evaluate the presence of floating product; none was detected in any of the wells. The depth to groundwater at the site ranged from 2.31 feet below top of casing (btoc) in monitoring well MW-10 to 7.55 feet btoc in monitoring well MW-6. Table 1 summarizes groundwater levels measured during sampling events since October 2001, including the current event. Water levels from the current sampling event are consistent with historical observations. Groundwater elevation contours for the December 2005 sampling event, using the January 2006 elevation data (see below), are shown on Figure 2.

The groundwater flow direction for the December 2005 monitoring event is predominantly to the north with a westerly flow component in the northern boundary of

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<sup>5</sup> GeoSyntec, 2006, "Response to Request for Work Plan, Shoreline Development Property, 2 T Street, Eureka, California," 13 January.

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the site. The average flow gradient is 0.0071 ft/ft (37.37 ft/mile). The historical groundwater flow direction has been typically to the north under a similar gradient.

## WELL SURVEY

The elevations and locations of the site monitoring wells were surveyed by SHN Consulting Engineers and Geologists of Eureka, California (SHN) on 11 January 2006. SHN used a vertical datum of NAVD88 for the monitoring well top of casing elevations, to comply with Geotracker requirements, and a horizontal datum of NAD83 for the monitoring well locations. The January 2006 elevation data are included in Table 1 and were used to create the groundwater contours for the December 2005 monitoring event. The data from SHN will be uploaded to Geotracker.

The January 2006 top of casing elevations for monitoring wells MW-1, MW-2, MW-7, MW-9, and MW-10 were generally within 0.5 foot of the previous top of casing elevations measured in October 1995. The January 2006 top of casing elevations for monitoring wells MW-3, MW-4, and MW-6 were more than three feet higher than the October 1995 top of casing elevations, which is consistent with the addition of a protective surface casing (i.e., "stovepipe") at each well between October 1995 and January 2006.

The surveyor from SHN noted the condition of monitoring well MW-4 as being poor and out of plumb, meaning it leans almost a foot to the west and approximately 0.5 foot to the north. Monitoring well MW-4 will be destroyed, in accordance with Humboldt County regulations.

## ANALYTICAL RESULTS

Calscience Environmental of Garden Grove, California, provided all sample containers and analyzed the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, MW-6, MW-7, MW-9, and MW-10. Calscience analyzed the samples for total petroleum hydrocarbon as diesel (TPHd) with and without silica gel cleanup using EPA Method 8015M. The TPHd analyses were run with silica gel cleanup to remove organic material that may influence the diesel concentration determination. The analytical laboratory report is provided in Attachment 2.



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Results from the TPHd without silica gel cleanup indicated TPHd was detected in the six monitoring wells sampled at concentrations ranging from 69 micrograms per liter ( $\mu\text{g}/\text{L}$ ) in MW-1 to 1,700  $\mu\text{g}/\text{L}$  in MW-6. With the silica gel cleanup, TPHd concentrations ranged from 53  $\mu\text{g}/\text{L}$  in MW-7 to 260  $\mu\text{g}/\text{L}$  in MW-6. It appears that naturally occurring hydrocarbons contribute to the TPHd concentrations detected in the analyses performed without the silica gel cleanup.

The groundwater sample from monitoring well MW-9, located upgradient of historical site activities, had a TPHd with silica gel cleanup concentration of 67  $\mu\text{g}/\text{L}$ . With silica gel cleanup, TPHd was not detected in the groundwater sample from the other upgradient monitoring well, MW-10.

#### QA/QC

GeoSyntec conducted a quality assurance/quality control (QA/QC) review of the analytical data. Data were reviewed for completeness, accuracy, precision, sample contamination, conformance with holding times, and detection limits within acceptable ranges. The results of the review indicate the data are of acceptable quality.

#### FUTURE WORK

GeoSyntec, on behalf of Shell Oil Company, is submitting a work plan, concurrently with this monitoring report, to address the additional comments from the RWQCB in their 21 November 2005 letter. The work plan includes a review of the remedy selection process used for the site Remedial Action Plan (RAP) and a description of proposed work to evaluate the extent of groundwater impacts in the vicinity of downgradient monitoring well MW-1 and the location of the surface water-groundwater interface. The work plan also includes a proposed schedule for additional groundwater monitoring at the site.

Based on field observations, monitoring well MW-4 will be destroyed in accordance with Humboldt County regulations, due to a badly damaged above-ground well casing.

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If you have any questions or comments regarding this monitoring report, please contact Ms. Campagna at (707) 399-7878 or the undersigned at (510) 836-3034.

Sincerely,



*Susan H. Skoe*

Susan H. Skoe, P.E.  
Project Engineer

*Carolyn Kneiblher*

Carolyn Kneiblher, C.HG.  
Associate Hydrogeologist

Copy w/attachments to:

Ms. Carol Campagna, Shell Oil Company  
Mr. Fred Griffith, CUE, IV, LLC  
Ms. Linda Mackey-Taverner, SCS Engineers

Attachments:

- |              |                                                          |
|--------------|----------------------------------------------------------|
| Table 1      | Groundwater Monitoring Results                           |
| Figure 1     | Site Location Map                                        |
| Figure 2     | Analytical Results and Groundwater Elevation Contour Map |
| Attachment 1 | Blaine Tech Field Report                                 |
| Attachment 2 | Calscience Analytical Data Report                        |



**Table 1**  
**Groundwater Monitoring Results**  
**Shoreline Development, Eureka, California**

Well No.	Date	TOC Elevation (ft msl) <sup>1</sup>	Depth to Water (ft)	Groundwater Elevation (ft msl)	TPHd without silica gel (ug/L)	TPHd with silica gel (ug/L)
MW-1	Dec-05	8.50	2.70	5.80	69	59
	Aug-05	8.84 <sup>2</sup>	3.78	5.06	630	180
	Apr-05		5.57	3.27	--	--
	Dec-04		2.64	6.20	<500	<50
	Dec-03		2.10	6.74	190	84
	Dec-02		5.28	3.56	67	<50
	Oct-01		3.75	5.09	100	100
MW-2	Dec-05	9.15	4.06	5.09	1,400	210
	Aug-05	9.48 <sup>2</sup>	3.80	5.68	1,000	440
	Apr-05		1.67	7.81	--	--
	Dec-04		0.43	9.05	<500	<50
	Dec-03		1.72	7.76	520	120
	Dec-02		4.40	5.08	200	<50
	Oct-01		4.25	5.23	560	300
MW-3	Dec-05	12.98	4.87	8.11	870	150
	Aug-05	9.16 <sup>2,3</sup>	6.60	NE	--	--
	Apr-05		4.72	NE	--	--
	Dec-04		3.96	NE	--	--
	Dec-03		4.27	NE	--	--
	Dec-02		6.35	NE	--	--
	Oct-01		7.80	NE	--	--
MW-4	Dec-05	12.58	4.36	8.22	--	--
	Aug-05	9.28 <sup>2,3</sup>	NS <sup>4</sup>	NE	--	--
	Apr-05		3.21	NE	--	--
	Dec-04		3.11	NE	--	--
	Dec-03		4.00	NE	--	--
	Dec-02		7.04	NE	--	--
	Oct-01		8.10	NE	--	--

**Table 1**  
**Groundwater Monitoring Results**  
**Shoreline Development, Eureka, California**

Well No.	Date	TOC Elevation (ft msl) <sup>1</sup>	Depth to Water (ft)	Groundwater Elevation (ft msl)	TPHd without silica gel (ug/L)	TPHd with silica gel (ug/L)
MW-6	Dec-05	13.10	7.55	5.55	1,700	260
	Aug-05	9.59 <sup>2,3</sup>	8.37	NE	1,900	550
	Apr-05		10.09	NE	990	170
	Dec-04		7.21	NE	1,800	110
	Dec-03		6.64	NE	2,100	920
	Dec-02		7.79	NE	180	<50
	Oct-01		8.25	NE	410	200
MW-7	Dec-05	8.40	2.38	6.02	620 / 490	53 / <50
	Aug-05	8.73 <sup>2</sup>	3.38	5.35	1000	560
	Apr-05		3.61	5.12	430	110
	Dec-04		--	NS	NS	NS
	Dec-03		2.18	6.55	1,200	410
	Dec-02		3.56	5.17	59	<50
	Oct-01		3.55	5.18	98	40
MW-9	Dec-05	10.31	2.72	7.59	570	67
	Aug-05	10.81 <sup>2</sup>	3.13	7.68	--	--
	Apr-05		1.16	9.65	--	--
	Dec-04		1.20	9.61	--	--
	Dec-03		1.76	9.05	--	--
	Dec-02		3.22	7.59	--	--
	Oct-01		3.90	6.91	--	--
MW-10	Dec-05	10.29	2.31	7.98	240	<50
	Aug-05	10.81 <sup>2</sup>	3.11	7.7	--	--
	Apr-05		1.41	9.40	--	--
	Dec-04		0.85	9.96	--	--
	Dec-03		1.68	9.13	--	--
	Dec-02		3.23	7.58	--	--
	Oct-01		4.15	6.66	--	--

Notes:

1) Top of casing (TOC) elevation surveyed on 11 January 2006

2) Top of casing (TOC) elevation surveyed October 1995

3) Casing elevation in doubt; groundwater elevation not calculated

4) Monitoring well was dry

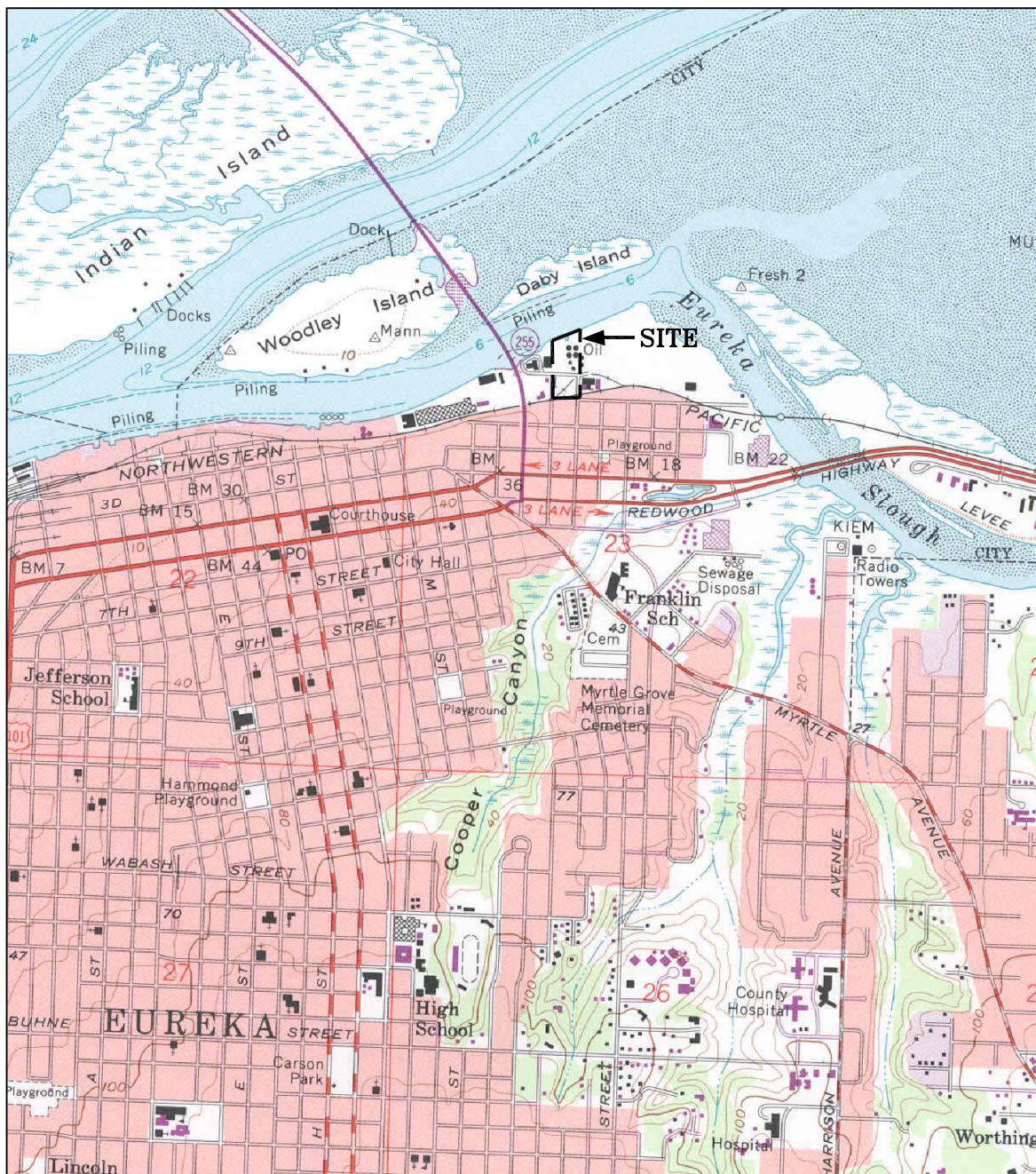
--" Not Sampled

NE - Not Estimated

"/" - Sample / Duplicate

TPHd - Total Petroleum Hydrocarbons as diesel

NS - Not sampled



Topo Source: U.S.G.S. 7.5 Minute Series,  
Eureka, CA Quadrangle (1972)  
Contour Interval = 20 ft

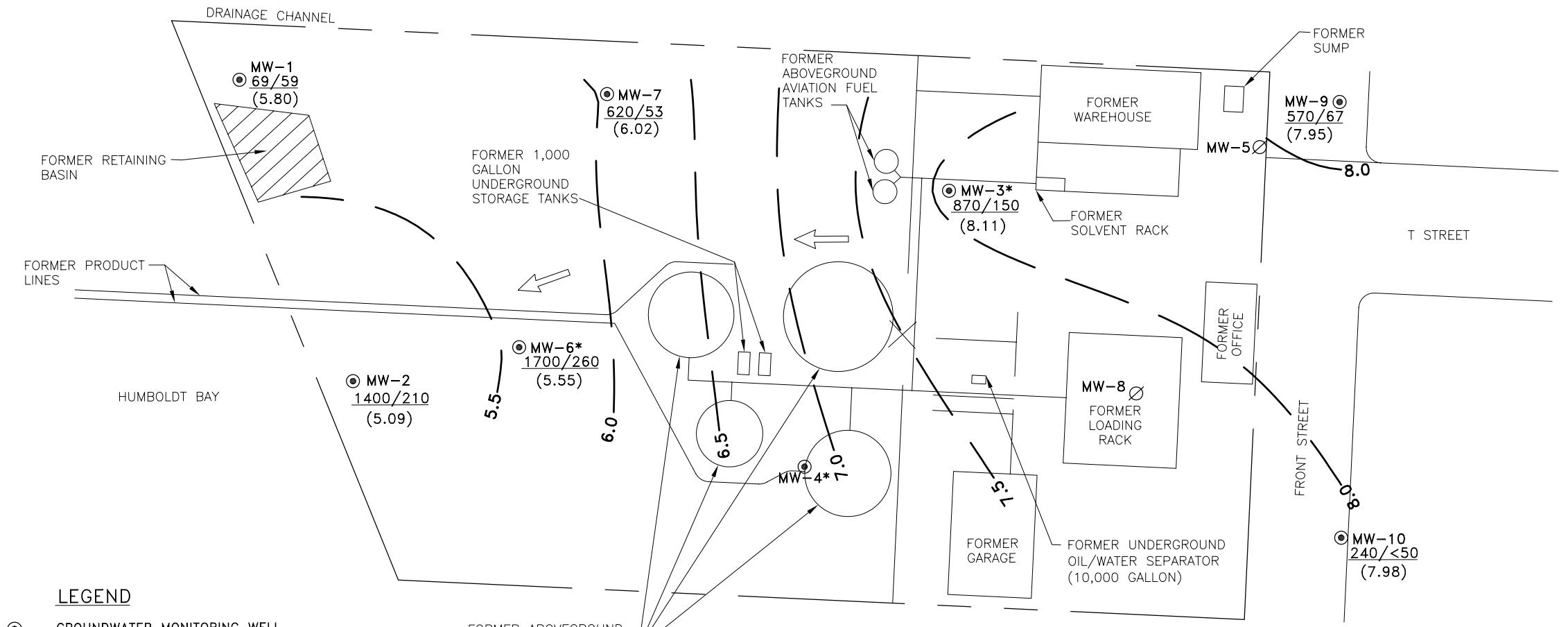
**SITE LOCATION MAP  
SHELL SHORELINE DEVELOPMENT  
EUREKA, CALIFORNIA**

0 1000 2000  
APPROX.  
SCALE IN FEET



**GEOSYNTEC CONSULTANTS**

FIGURE NO.	1
PROJECT NO.	WR0575
DATE	NOVEMBER_2005
FILE NO.	SITE_LOCATION



0 30 60  
SCALE IN FEET



GEOSYNTEC CONSULTANTS

GROUNDWATER MONITORING RESULTS – DECEMBER 2005  
SHORELINE DEVELOPMENT PROPERTY  
2 T STREET, EUREKA, CALIFORNIA

FIGURE NO. 2	PROJECT NO. WR0575
DATE: 29 DECEMBER 2005	

## **ATTACHMENT 1**

### **BLAINE TECH FIELD REPORT**

## WELL GAUGING DATA

Project # 051212.DW2 Date 12/14/05 Client Geosyntec

Site Shoreline Development

+ removed caps prior to gauging

## **WELL MONITORING DATA SHEET**

BTS #:	051212-DK2	Client:	GeoSyntec
Sampler:	Dan Koskela	Date:	12/14/05
Well I.D.:	<u>WW-1</u>	Well Diameter:	2    3 <u>4</u> 6    8
Total Well Depth (TD):	<u>17.27</u>	Depth to Water (DTW):	<u>2.70</u>
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade	D.O. Meter (if req'd): YSI    HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>5.161</u>			

**Purge Method:** Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible *✓*      **Waterra** Peristaltic Extraction Pump Other \_\_\_\_\_

**Sampling Method:** Bailer  
Disposable Bailer *✓*  
Extraction Port  
Dedicated Tubing

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	$\text{radius}^2 * 0.163$

Time	Temp (°F)	pH	Cond. mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
746	53.9	6.5	13,33	64	9.5	
748	55.1	6.7	13,27	56	19.0	
750	55.6	6.8	13,19	56	28.5	

Did well dewater? Yes  No  Gallons actually evacuated: 28,5

Sampling Date: 12/14/03 Sampling Time: 7:55 Depth to Water: 3.43

Sample I.D.: MW-1 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	<sup>mg</sup> /L	Post-purge:	<sup>mg</sup> /L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

**Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (800) 545-7558**

# WELL MONITORING DATA SHEET

BTS #: 051212-DK2	Client: GeoSyntec		
Sampler: Dan Koskela	Date: 12/14/05		
Well I.D.: MW-2	Well Diameter: 2 3 4 6 8		
Total Well Depth (TD): 18.16	Depth to Water (DTW): 4.06		
Depth to Free Product:	Thickness of Free Product (feet):		
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI	HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.88			

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing																
Other: _____																		
$\frac{9.2 \text{ (Gals.)}}{1 \text{ Case Volume}} \times \frac{3}{\text{Specified Volumes}} = \frac{27.6}{\text{Calculated Volume}}$		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td><math>\text{radius}^2 * 0.163</math></td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	$\text{radius}^2 * 0.163$
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1"	0.04	4"	0.65															
2"	0.16	6"	1.47															
3"	0.37	Other	$\text{radius}^2 * 0.163$															

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
710	53.6	6.5	1742	31	9.5	
712	54.1	6.5	1767	36	18.5	
714	54.3	6.5	1791	28	28.0	
						RR - 1.7 ft/min

Did well dewater? Yes  Gallons actually evacuated: 28.0

Sampling Date: 12/14/05 Sampling Time: 720 Depth to Water: 4.21

Sample I.D.: MW-2 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Pre-purge: mg/L Post-purge: mg/L

O.R.P. (if req'd): Pre-purge: mV Post-purge: mV

# WELL MONITORING DATA SHEET

BTS #: 051212-DK2	Client: GeoSyntec		
Sampler: Dan Koskela	Date: 12/14/03		
Well I.D.: MW-3	Well Diameter: 2 3 4 6 8		
Total Well Depth (TD): 21.160	Depth to Water (DTW): 4.87		
Depth to Free Product:	Thickness of Free Product (feet):		
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI	HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.22			

*(Level 1)*

Purge Method: Bailer	Waterra	Sampling Method: Bailer																
Disposable Bailer	Peristaltic	Disposable Bailer <input checked="" type="checkbox"/>																
Positive Air Displacement	Extraction Pump	Extraction Port																
Electric Submersible <input checked="" type="checkbox"/>	Other _____	Dedicated Tubing																
Other: _____																		
$10.9 \text{ (Gals.)} \times 3 = 32.7 \text{ Gals.}$		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
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2"	0.16	6"	1.47															
3"	0.37	Other	radius <sup>2</sup> * 0.163															

Time	Temp (°F)	pH	Cond. (mS or <del>PS</del> )	Turbidity (NTUs)	Gals. Removed	Observations
839	54.7	7.4	741	124	11.0	
841	54.3	7.3	737	107	22.0	
843	54.2	7.2	735	88	33.0	
					$RR = 1.5 \text{ ft/min}$	

Did well dewater? Yes  Gallons actually evacuated: 33.0

Sampling Date: 12/14/03 Sampling Time: 850 Depth to Water: 8.07

Sample I.D.: MW-3 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
------------------	------------	------	-------------	------

O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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## **WELL MONITORING DATA SHEET**

BTS #:	051212-DK2	Client:	GeoSyntec
Sampler:	Dan Koskela	Date:	12/14/05
Well I.D.:	MW-4	Well Diameter:	2 3 (4) 6 8 _____
Total Well Depth (TD):		Depth to Water (DTW):	
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:			

Purge Method:	Bailer	Waterra	Sampling Method:	Bailer																
	Disposable Bailer	Peristaltic		Disposable Bailer																
	Positive Air Displacement	Extraction Pump		Extraction Port																
	Electric Submersible	Other _____		Dedicated Tubing																
			Other:	_____																
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3"	0.37	Other	radius <sup>2</sup> * 0.163																	
$\text{_____(Gals.) X } \text{_____} = \text{_____ Gals.}$																				
$1 \text{ Case Volume} \quad \text{Specified Volumes} \quad \text{Calculated Volume}$																				

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
						<i>Stand pipe Beml</i>
*	No		No Sample Taken			

Sampling Date:                    Sampling Time:                    Depth to Water:

Sample I.D.: Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	$\text{mg/L}$	Post-purge:	$\text{mg/L}$
O.R.P. (if req'd):	Pre-purge:	$\text{mV}$	Post-purge:	$\text{mV}$

# WELL MONITORING DATA SHEET

BTS #: 051212-DK2	Client: GeoSyntec
Sampler: Dan Koskela	Date: 12/14/05
Well I.D.: MW-6	Well Diameter: 2 3 (4) 6 8
Total Well Depth (TD): 18.27	Depth to Water (DTW): 7.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.69	

Purge Method: Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible X

10.12 Waterra  
Peristaltic  
Extraction Pump  
Other \_\_\_\_\_

Sampling Method: Bailer  
Disposable Bailer X  
Extraction Port  
Dedicated Tubing

Other: \_\_\_\_\_

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

7.0 (Gals.) X
3
=
21.0 Gals.

1 Case Volume
Specified Volumes
Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or <del>µS</del> )	Turbidity (NTUs)	Gals. Removed	Observations
642	51.4	6.5	2384	122	7.0	
644	52.9	6.5	2376	91	14.0	
646	53.2	6.5	2357	84	21.0	
						RR = 1.7 ft/min

Did well dewater? Yes  Gallons actually evacuated: 21.0

Sampling Date: 12/14/05 Sampling Time: 650 Depth to Water: 8.65

Sample I.D.: MW-6 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable):  @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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# WELL MONITORING DATA SHEET

BTS #: 051212-DK2	Client: GeoSyntec
Sampler: Dan Koskela	Date: 12/14/05
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8
Total Well Depth (TD): 17.83	Depth to Water (DTW): 2.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.47	

Purge Method: Bailer 16:45 Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Baile <del>x</del> Extraction Port Dedicated Tubing																
		Other: _____																
$\frac{10.0 \text{ (Gals.)}}{1 \text{ Case Volume}} \times \frac{3}{\text{Specified Volumes}} = \frac{30.0 \text{ Gals.}}{\text{Calculated Volume}}$		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier															
1"	0.04	4"	0.65															
2"	0.16	6"	1.47															
3"	0.37	Other	radius <sup>2</sup> * 0.163															

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
8/4	55.5	6.9	12.05	76	10.0	odor
8/6	54.8	7.0	8310 µS	64	20.0	
8/8	56.8	7.0	11187	64	30.0	
						RR = 1.6 ft/min

Did well dewater? Yes  No Gallons actually evacuated: 30.0

Sampling Date: 12/14/05 Sampling Time: 825 Depth to Water: 5.23

Sample I.D.: MW-7 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable): DOP-1 @ 830

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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# **WELL MONITORING DATA SHEET**

BTS #:	051212-DK2	Client:	GeoSyntec
Sampler:	Dan Koskela	Date:	12.14.05
Well I.D.:	ULW-9	Well Diameter:	2 <input checked="" type="radio"/> 4    6    8
Total Well Depth (TD):	14.71	Depth to Water (DTW):	2.72
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC      Grade	D.O. Meter (if req'd):	YSI      HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.12			

Purge Method: Bailer  
11.99  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible  Waterra  
Peristaltic  
Extraction Pump  
Other \_\_\_\_\_

Sampling Method: Bailer  
Disposable Bailex   
Extraction Port  
Dedicated Tubing  
Other: \_\_\_\_\_

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Did well dewater? Yes  No  Gallons actually evacuated: 13,5

Sampling Date: 12/14/2015 Sampling Time: 915 Depth to Water: 4.76

Sample I.D.: MW-9 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): \_\_\_\_\_ Time \_\_\_\_\_ Dup. \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

# **WELL MONITORING DATA SHEET**

BTS #:	051212-DK2	Client:	GeoSyntec
Sampler:	Dan Koskela	Date:	12/14/05
Well I.D.:	MW-10	Well Diameter:	2 <u>3</u> 4    6    8    _____
Total Well Depth (TD):	11.26	Depth to Water (DTW):	2.31
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	<u>PVC</u>	Grade	D.O. Meter (if req'd): YSI    HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:			4.10

Purge Method: Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible  Other \_\_\_\_\_

Waterra  
Peristaltic  
Extraction Pump

Sampling Method: Bailer  
Disposable Bailer   
Extraction Port  
Dedicated Tubing

<u>3.3</u>	(Gals.) X	<u>3</u>	=	<u>9.9</u>	Gals.
1 Case Volume	Specified Volumes		Calculated Volume		

Did well dewater? Yes No Gallons actually evacuated: 10

Sampling Date: 12/14/05 Sampling Time: 930 Depth to Water: 4.04

Sample I.D.: MW-10 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

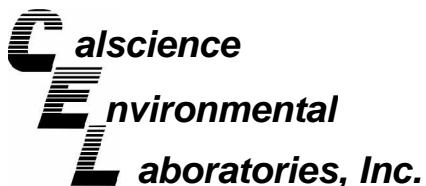
EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	<sup>mg</sup> / <sub>L</sub>	Post-purge:	<sup>mg</sup> / <sub>L</sub>
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## **ATTACHMENT 2**

# **CALSCIENCE ANALYTICAL DATA REPORT**



December 27, 2005

Susan Skoe  
GeoSyntec Consultants  
475 14th Street, Suite 450  
Oakland, CA 94612-1940

Subject: **Calscience Work Order No.: 05-12-1028**  
**Client Reference: Shoreline Development - 2T Street, Eureka, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 12/17/2005 and analyzed in accordance with the attached chain-of-custody.

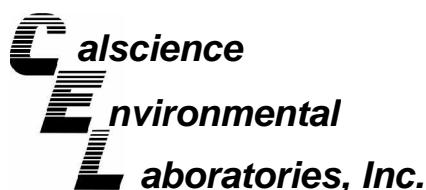
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Don Burley".

Calscience Environmental  
Laboratories, Inc.  
Don Burley  
Project Manager



## Analytical Report



GeoSyntec Consultants  
475 14th Street, Suite 450  
Oakland, CA 94612-1940

Date Received: 12/17/05  
Work Order No: 05-12-1028  
Preparation: EPA 3510C  
Method: DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Page 1 of 5

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>MW-1</b>	<b>05-12-1028-1</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	69	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 83 51-141

MW-2	05-12-1028-2	12/14/05	Aqueous	12/19/05	12/20/05	051219B05
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	1400	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 63 51-141

MW-3	05-12-1028-3	12/14/05	Aqueous	12/19/05	12/20/05	051219B05
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	870	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 81 51-141

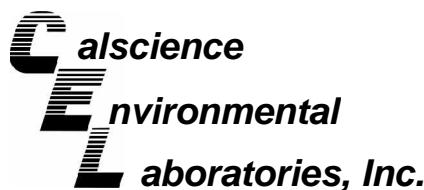
MW-6	05-12-1028-4	12/14/05	Aqueous	12/19/05	12/20/05	051219B05
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	1700	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 75 51-141

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



GeoSyntec Consultants  
475 14th Street, Suite 450  
Oakland, CA 94612-1940

Date Received: 12/17/05  
Work Order No: 05-12-1028  
Preparation: EPA 3510C  
Method: DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Page 2 of 5

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>MW-7</b>	<b>05-12-1028-5</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	620	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 67 51-141

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>MW-9</b>	<b>05-12-1028-6</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	570	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 73 51-141

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>MW-10</b>	<b>05-12-1028-7</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	240	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 64 51-141

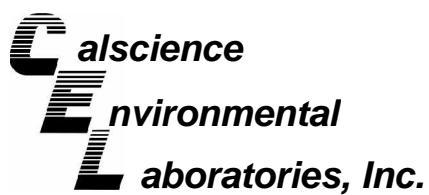
Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>DUP-1</b>	<b>05-12-1028-8</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	490	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	

Decachlorobiphenyl 67 51-141

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



GeoSyntec Consultants 475 14th Street, Suite 450 Oakland, CA 94612-1940	Date Received: Work Order No: Preparation: Method:	12/17/05 05-12-1028 EPA 3510C DHS LUFT
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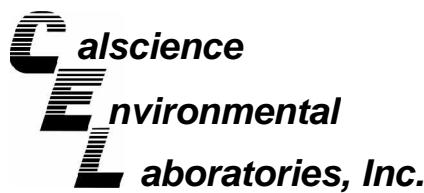
Project: Shoreline Development - 2T Street, Eureka, CA

Page 3 of 5

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	098-03-039-1,092	N/A	Aqueous	12/19/05	12/19/05	051219B05

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	50	1		ug/L
<u>Surrogates:</u>		<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
Decachlorobiphenyl	88		51-141		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



GeoSyntec Consultants  
475 14th Street, Suite 450  
Oakland, CA 94612-1940

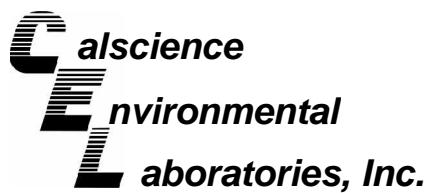
Date Received: 12/17/05  
Work Order No: 05-12-1028  
Preparation: EPA 3550B  
Method: DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Page 4 of 5

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>MW-1</b>	<b>05-12-1028-1</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	59	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	86	51-141				
<b>MW-2</b>	<b>05-12-1028-2</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	210	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	80	51-141				
<b>MW-3</b>	<b>05-12-1028-3</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	150	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	87	51-141				
<b>MW-6</b>	<b>05-12-1028-4</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	260	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	81	51-141				

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



GeoSyntec Consultants  
475 14th Street, Suite 450  
Oakland, CA 94612-1940

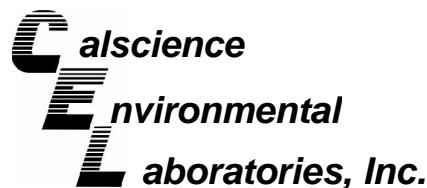
Date Received: 12/17/05  
Work Order No: 05-12-1028  
Preparation: EPA 3550B  
Method: DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Page 5 of 5

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
<b>MW-7</b>	<b>05-12-1028-5</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	53	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	66	51-141				
<b>MW-9</b>	<b>05-12-1028-6</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	67	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	72	51-141				
<b>MW-10</b>	<b>05-12-1028-7</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	ND	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	69	51-141				
<b>DUP-1</b>	<b>05-12-1028-8</b>	<b>12/14/05</b>	<b>Aqueous</b>	<b>12/19/05</b>	<b>12/20/05</b>	<b>051219B05</b>
Comment(s):	-The sample extract was subjected to Silica Gel treatment prior to analysis.					
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>	
TPH as Diesel	ND	50	1		ug/L	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
Decachlorobiphenyl	71	51-141				

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Quality Control - LCS/LCS Duplicate



GeoSyntec Consultants  
475 14th Street, Suite 450  
Oakland, CA 94612-1940

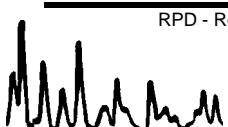
Date Received: N/A  
Work Order No: 05-12-1028  
Preparation: EPA 3510C  
Method: DHS LUFT

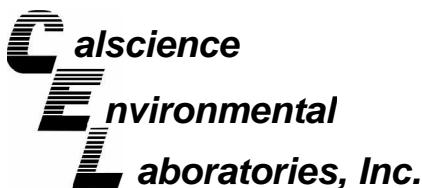
Project: Shoreline Development - 2T Street, Eureka, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
098-03-039-1,092	Aqueous	GC 6	12/19/05	12/20/05	051219B05

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	94	99	60-132	4	0-11	

RPD - Relative Percent Difference , CL - Control Limit





## Glossary of Terms and Qualifiers

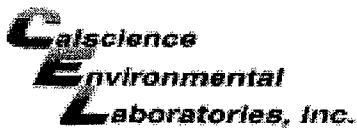


Work Order Number: 05-12-1028

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.







**WORK ORDER #:**

## **SAMPLE RECEIPT FORM**

**CLIENT:** Geosyntec consultants

**DATE:** 12/17/05

**TEMPERATURE – SAMPLES RECEIVED BY:**

## CALSCIENCE COURIER:

- Chilled, cooler with temperature blank provided.
  - Chilled, cooler without temperature blank.
  - Chilled and placed in cooler with wet ice.
  - Ambient and placed in cooler with wet ice.
  - Ambient temperature.
  - °C Temperature blank.

**LABORATORY (Other than Calscience Courier):**

- 3.2 °C Temperature blank.  
°C IR thermometer.  
Ambient temperature.

Initial:  $\pi$

**CUSTODY SEAL INTACT:**

Sample(s): \_\_\_\_\_ Cooler: \_\_\_\_\_ No (Not Intact) : \_\_\_\_\_ Not Applicable (N/A): \_\_\_\_\_  
Initial: TC

**SAMPLE CONDITION:**

- Chain-Of-Custody document(s) received with samples..... / .....  
Sample container label(s) consistent with custody papers..... / .....  
Sample container(s) intact and good condition..... / .....  
Correct containers for analyses requested..... / .....  
Proper preservation noted on sample label(s)..... / .....  
VOA vial(s) free of headspace..... / .....  
Tedlar bag(s) free of condensation..... / ..... ✓

Initial: LL

**COMMENTS:**

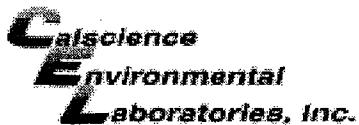
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**WORK ORDER #:** 0 9 - 1 2 - 1 0 2 8

## **SAMPLE RECEIPT FORM**

**CLIENT:** Grosvenor Consultants

**DATE:** 12/17/05

**TEMPERATURE – SAMPLES RECEIVED BY:**

## CALSCIENCE COURIER:

- Chilled, cooler with temperature blank provided.

Chilled, cooler without temperature blank.

Chilled and placed in cooler with wet ice.

Ambient and placed in cooler with wet ice.

Ambient temperature.

**LABORATORY (Other than Calscience Courier):**

- 3.1 °C Temperature blank.  
°C IR thermometer.  
Ambient temperature.

Initial: JL

**CUSTODY SEAL INTACT:**

Sample(s): \_\_\_\_\_ Cooler: \_\_\_\_\_ No (Not Intact) : \_\_\_\_\_ Not Applicable (N/A): \_\_\_\_\_  
Initial: TC

## SAMPLE CONDITION:

- Chain-Of-Custody document(s) received with samples.....

Sample container label(s) consistent with custody papers.....

Sample container(s) intact and good condition.....

Correct containers for analyses requested.....

Proper preservation noted on sample label(s).....

VOA vial(s) free of headspace.....

Tedlar bag(s) free of condensation.....

Initial:

**COMMENTS:**

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